* NOTICES *

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2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

EFFECT OF THE INVENTION

[Function and Effect of the Invention]Since the rack rail of the dish washer by this invention provides the through-hole which can pass the wash water injected from the washing nozzle of the dish washer, some wash water may flow through it through the through-hole. Therefore, while it is possible to lead some wash water injected from the washing nozzle of the dish washer at the time of washing to the tableware accommodated in the rack through the through-hole and being able to heighten a cleaning effect, It is possible to flush the residue which is flushed from tableware and remains on a rack rail with the water which flows on a rack rail after washing and falls through a through-hole, residue which remains on a rack rail can be lessened, and a rack rail can be kept clean.
[0006]
[Embodiment of the Invention]Below, one embodiment of this invention is described based on a drawing. In the dish washer shown in drawing 1 and drawing 2, while the rack rails 15 and 16, and the front guide 17 and the top panel 21 of the scouring kier 13 and a right-and-left couple are attached to the upper part of the frame 11 installed on a floor line in one -- the door 23 -- being rotatable (opening and closing are possible with the handle 23a) -- it being attached and, On the base plate 25 of the frame 11, the washing pump 27, the control box 29, the rinse tank (the inside is equipped with the sheath heater for heating) 31, a rinse pump (graphic display abbreviation), The cleanser pump 33 (pump which supplies cleanser in the scouring kier 13 from the external cleanser tank of a graphic display abbreviation) etc. are attached.
[0007]In this dish washer, each stoppers 18 and 18 which specify the closing position of the door 23 to the rack rails 15 and 16 are attached, The stopper 22 which specifies the open position of the door 23 to the top panel 21 is attached, and the spring 24 (what holds the door 23 at the time of door opening, and controls the self weight falling of the door 23 at the time of door closed) is infixed between the top panel 21 and the door 23. In the front face of the frame 11, the front panel 35 (the navigational panel 34 is incorporated), To both side surfaces, the

side panel 37 (left-hand side graphic display abbreviation), The rear panel (graphic display abbreviation) incorporating the fan motor for exhaust heat (what discharges air from the inside surrounded by the scouring kier 13 and the base plate 25, and each panel by the graphic display abbreviation) is attached to the back, respectively (refer to drawing 1). The base plate 25 of the frame 11 has dual structure of a superior lamella and an inferior lamella, and horizontally, the open air input 25a (what was provided in the superior lamella was shown in drawing 2) established in each board, respectively is displaced, and is provided, and it has the composition that water cannot invade easily from the floor line side.

[0008]The scouring kier 13 is formed in the shape in which the upper part carried out the opening, and stores the wash water of the specified quantity in a pars basilaris ossis occipitalis.

The pump filter 45 which equips with the overflow pipe 43 in one the crevice which ROAHEDDA 41 penetrated the bottom wall in the center of a bottom wall, and it was attached to it in one, and was provided ahead [bottom wall], and removes small residue is attached so that desorption is possible.

The slope 47 which derives water towards the front, and the tank filters 48 and 49 which remove big residue are attached to the intermediate stage part of the scouring kier 13 so that desorption is possible, The wash water derivation duct 51, the upper header 53, and the rinse-water guide pipe 55 grade are attached to the intermediate stage part back side of the scouring kier 13. While the sheath heater (graphic display abbreviation) for heating wash water is attached to the pars-basilaris-ossis-occipitalis right-hand side of the scouring kier 13, the heater cover 57 is attached.

[0009]The slope 47 has the ten rectangular holes 47a, as shown in drawing 2 and drawing 3, and the fine-tooth net 47b is formed in each rectangular hole 47a.

Water (a part of rinse water after rinsing wash water and tableware after washing tableware) flows also into the back pars basilaris ossis occipitalis of the scouring kier 13 through this net 47b.

For this reason, some wash water by which circulation feed is carried out with the washing pump 27 at the time of a washing process flows into the back pars basilaris ossis occipitalis of the scouring kier 13, The wash water which heated and carried out temperature up by the sheath heater is prevented from stagnating in the back pars basilaris ossis occipitalis of the scouring kier 13, and prevention from a temperature fall of wash water by which circulation feed is carried out with the washing pump 27 is achieved.

[0010]ROAHEDDA 41 is supporting the Roa cleaning jet nozzle 61 and the Roa rinse injection nozzle 63 fluid-tight and pivotable, respectively, While supplying the wash water in the scouring kier 13 fed from the washing pump 27 at the time of a washing process to the Roa cleaning jet nozzle 61, The rinse water (rinse water included the rinse in the rinse tank 31)

which rinses at the time of a rinse process and is fed from a pump (graphic display abbreviation) is supplied to the Roa rinse injection nozzle 63.
From the bottom wall of the scouring kier 13, it rinses with the washing pump 27 by the part which extended caudad, and is connected to the pump (graphic display abbreviation) via the respectively separate passage.
The Roa cleaning jet nozzle 61 and the Roa rinse injection nozzle 63 have many injection tips, respectively, and rotate them to ROAHEDDA 41 by the counteraction which injects water from each injection tip.
[0011]The upper header 53 is supporting the upper cleaning jet nozzle 65 and the upper rinse injection nozzle 67 fluid-tight and pivotable, respectively, While supplying the wash water in the scouring kier 13 fed from the washing pump 27 at the time of a washing process to the upper cleaning jet nozzle 65, The rinse water (rinse water included the rinse in the rinse tank 31) which rinses at the time of a rinse process and is fed from a pump (graphic display abbreviation) is supplied to the upper rinse injection nozzle 67.
While being connected to the washing pump 27 via the wash water guide pipe (graphic display abbreviation) allocated caudad from the bottom wall of the wash water derivation duct 51 and the scouring kier 13, It rinses via the rinse-water guide pipe 55 and the rinse-water guide pipe (graphic display abbreviation) caudad allocated from the bottom wall of the scouring kier 13, and is connected to the pump (graphic display abbreviation).
The upper cleaning jet nozzle 65 and the upper rinse injection nozzle 67 have many injection tips, respectively, and rotate them to the upper header 53 by the counteraction which injects water from each injection tip.
[0012]One pair of stoma 53a (stoma into which water does not flow easily although air flows easily) for an air inflow which is open for free passage to an internal wash water passage is formed in the crowning of the upper header 53, When one pair of stoma for scuppers (graphic display abbreviation) which is open for free passage to an internal wash water passage is provided in the boss section bottom of the upper cleaning jet nozzle 65 and air enters from the stoma 53a of an airstream necessity at the time of the completion of washing, The wash water in the wash water passage of the upper header 53 and the upper cleaning jet nozzle 65 is promptly discharged also from the stoma for scuppers (graphic display abbreviation), shortening of the subsequent dripping time of the wash water from the upper cleaning jet nozzle 65 to tableware is achieved by this, and improvement in rinse capability is achieved.
[0013]In the dish washer constituted as mentioned above, After carrying in the rack (graphic display abbreviation) which accommodated tableware along with both the rack rails 15 and 16 where the door 23 is opened (the door 23 is held by the spring 24 at an opened state), and setting to the prescribed position between nozzles, If the push operation of the operation button is usually carried out for example, it closed the door 23 and has arranged to the

navigational panel 34, The control machinery in the control box 29 controls the operation of various kinds of controlled instruments (for example, the washing pump 27, the cleanser pump 33, a rinse pump, etc.), and after a predetermined washing process is performed, a predetermined rinse process is performed.

[0014]In a washing process, when wash water (optimum dose of cleanser is contained) is fed by up-and-down both the cleaning jet nozzles 61 and 65 from the washing pump 27, In [the tableware accommodated in the rack with the wash water injected from up-and-down both the cleaning jet nozzles 61 and 65 is washed, and] a rinse process, When a rinse water (optimum dose of rinse is included) is fed by up-and-down both the rinse injection nozzles 63 and 67 from a rinse pump, the tableware accommodated in the rack by the rinse water injected from up-and-down both the rinse injection nozzles 63 and 67 is rinsed.

[0015]By the way, in this embodiment, right-and-left both the rack rails 15 and 16 have many through-holes 15a and 16a in the approximately center of a longitudinal direction, as drawing 3 - drawing 10 showed. These through-holes 15a and 16a are formed corresponding to the rotation locus of the Roa cleaning jet nozzle 61 and the Roa rinse nozzle 63, and have penetrated the rack rails 15 and 16 to the sliding direction.

The rinse water injected from the wash water and the Roa rinse injection nozzle 63 which are injected from the Roa cleaning jet nozzle 61 can pass.

[0016]Therefore, while it is possible to lead some wash water injected from the Roa cleaning jet nozzle 61 at the time of a washing process to the tableware accommodated in the rack through the through-holes 15a and 16a and being able to heighten a cleaning effect, It is possible to flush the residue which is flushed from tableware and remains on the rack rail 15 and 16 with the water which flows on the rack rail 15 and 16 after a washing process, and falls through the through-holes 15a and 16a, and residue which remains on the rack rail 15 and 16 can be lessened.

[0017]While it is possible to lead a part of rinse water injected from the Roa rinse injection nozzle 63 at the time of a rinse process to the tableware accommodated in the rack through the through-holes 15a and 16a and being able to heighten the rinse effect, It is possible to flush the residue which is flushed from tableware and remains on the rack rail 15 and 16 with the water which flows on the rack rail 15 and 16 after a rinse process, and falls through the through-holes 15a and 16a, and residue which remains on the rack rail 15 and 16 can be lessened. Therefore, the rack rails 15 and 16 can be kept clean.

[0018]In the above-mentioned embodiment, the water-splash-proof boards 15b and 16b are set up by each rack rails 15 and 16 in one, and reduction of part mark is achieved so that clearly also from drawing 2, drawing 5, and drawing 8. The tie-down plates 15c and 16c of the order couple are formed in the undersurface of each rack rails 15 and 16 in one with the U

shape, **** to the mounting hole 15c2 established in each tie-down plates 15c and 16c while making the notch 15c1 provided in each tie-down plates 15c and 16c, and 16c1 engage with each four bearing bars 14 beforehand provided in the scouring kier 13, and 16c2, and 19 is inserted in, by screwing on the female screw which turned this screw thread 19 by hand, and was formed in the axial center of the bearing bar 14, each rack rails 15 and 16 can be attached now to the scouring kier 13 by tool needlessness, and the improvement (with a group -- easy) of assembliability is achieved.

[0019]In the above-mentioned embodiment, although many circular through-holes 15a and 16a were formed in the rack rails 15 and 16 and were carried out to them, the shape and the number of the through-hole provided in a rack rail can be changed suitably, and is not limited to the above-mentioned embodiment. In the above-mentioned embodiment, although the through-holes 15a and 16a were formed corresponding to the rotation locus of the Roa cleaning jet nozzle 61 and the Roa rinse nozzle 63, it is also possible to provide and carry out a through-hole covering the overall length of a rack rail.

[Translation done.]